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ELECTRIC LIGHT & POWER

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VOICE OF THE ELECTRIC UTILITY INDUSTRY

Top 100: '89 better for most utilities

BARRINGTON, IL—The nation's Top 100 investor-owned electric utilities continued their financial improvement in 1989. This sustained recovery surprised many, since 1989 was characterized by a return to more normal temperatures from 1988's superheated summer.

Although total net income for the nation's biggest electric utility companies increased almost 11 percent, per-share earnings tumbled by 11 cents per average share, down nearly 5 percent. Average residential use of electricity also fell by 53 kWh, or a bit over half a percent.

These are the quick highlights from *EL&P's* 25th annual survey of the investor-owned electric utility industry.

Revenues, which include returns from diversified operations of holding companies, and companies that function similarly to holding companies, hit an all-time high of $165.5 billion, representing a gain of 4.8 percent.

Interestingly, revenues from electric operations—the largest source of funds for most electric utilities and electric utility holding companies—grew the least, just 4.7 percent. Gas revenues grew by 5.2 percent and "other" revenues increased by 14.8 percent.

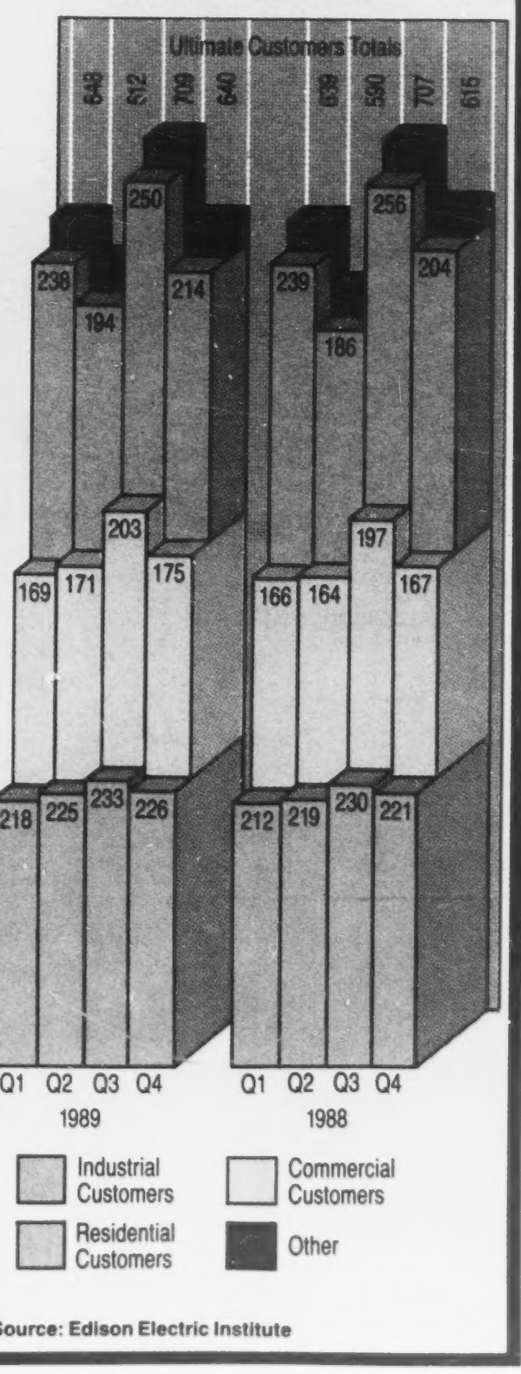
Net income from all operations increased a solid 10.8 percent in 1989, to $15.0 billion and reflected the continuing cost-control efforts of utility managements. The gain is even more impressive in light of $1.35 billion in losses suffered by just three utilities—Pinnacle West Capital Corp., Middle South Utilities (now Entergy Corp.) and Illinois Power Co.

Kilowatthour sales grew by 2.6 percent, led by commercial sales, up 5.2 percent, and "other" sales, which climbed 4.9 percent. Growth in residential sales, 1.4 percent, and industrial sales, up just 0.6 percent, lagged far behind.

Residential kWh sales growth was disappointing in that it did not even keep up with the increase in electric customers, which was up 1.7 percent.

Top 100
25th annual report starts on page 33

ELECTRICAL SALES
(GWH in 1,000's)



Source: Edison Electric Institute

New Orleans nixes NOPSI buyout

NEW ORLEANS—The city council here on May 17 voted 5-2 against proceeding with its $717-million buyout proposal of New Orleans Public Service Inc. from Entergy Corp. The vote quiets a seven-year takeover threat; rate talks apparently will follow buyout discussions.

"We will sit down with city officials and look at issues of concern," said John Cordaro, group vice president for NOPSI and LP&L. "There's a perception that rates in New Orleans are higher than they ought to be." He would not be specific about the chance of a slower phase-in of Grand Gulf nuclear plant costs, still in litigation.

Studies of the takeover economics ranged from customer savings of $798 million to added costs of $1.7 billion over 20 years. Taxable bonds would have been needed.

PacifiCorp pursues PWCC for a 4th time

PORTLAND—PacifiCorp bid a fourth time for Arizona Public Service Co. assets, offering $1.82 billion cash for the parent, Pinnacle West Capital Corp.

Analysts said PWCC would have difficulty turning away this bid. Although PWCC got rid of two hurting subsidiaries recently, it posted a large '89 loss. Including assumption of debt, the offer is about $21/share. PWCC stock jumped $3.625 on May 17, to $16.375.

The deal is also enticing for APS customers, promising just 2-percent annual rate increases for four years. If approved, the combined utility would cover eight states, add transmission access to the power-hungry California market, and delay plant construction with opposite seasonal peaks.

LATE NEWS

A conference committee will try to meld Senate and House bills on Clean Air. The House passed H.R.3030 on May 23; see below.
Clean Coal Technology Program's fourth call for proposals, due June 1, will be delayed. DOE said pending legislation and funding delays could lead to amending or cancelling projects worth $600M in matching funds.
PWCC rejects PacifiCorp's latest bid (below, p.4) as well as Salt River Project's May 18 bid of up to $500 million for some Arizona Public Service transmission/distribution facilities near Phoenix.
Record flooding, storms and tornados damaged utility facilities in Arkansas, Texas and Oklahoma.
An EPA draft report said electromagnetic radiation and cancer may be linked. The final report is expected this summer.

Utilities refigure Clean Air options; Congress debates

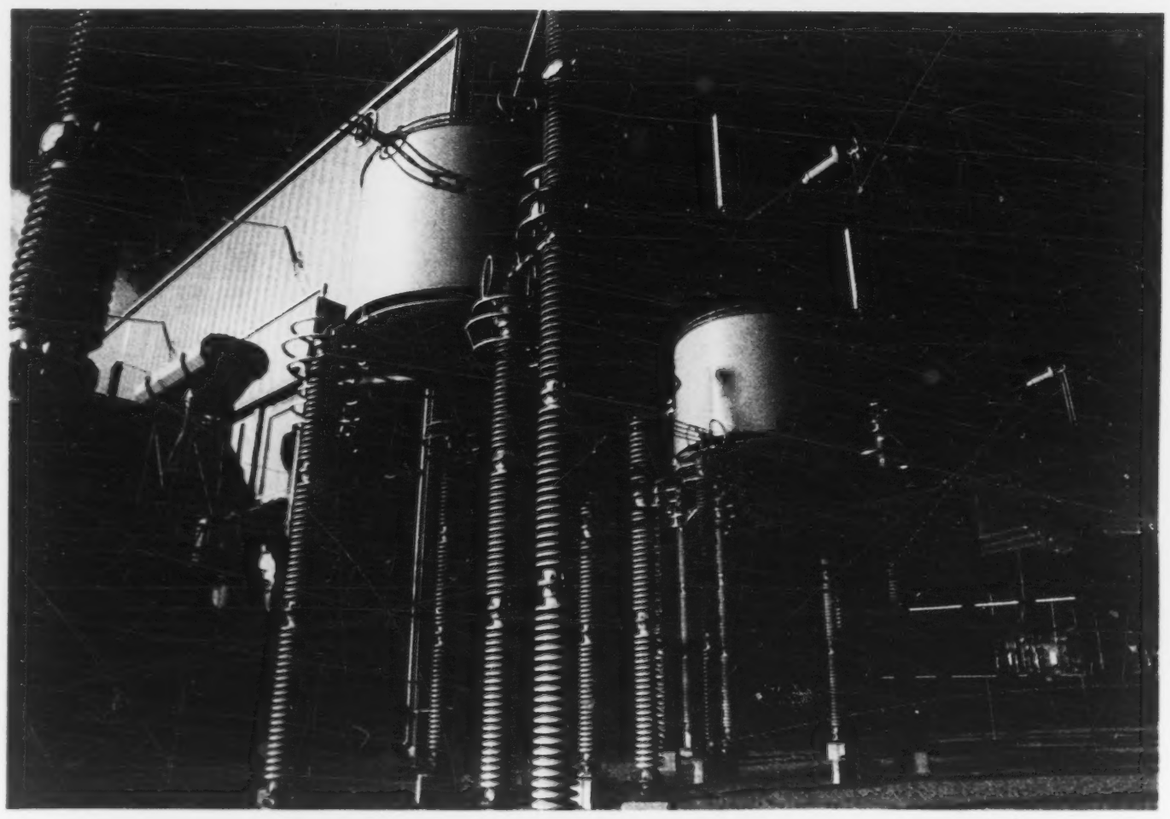
WASHINGTON—While clean air legislation takes shape in the House, the industry contemplates the Senate version and tries to prepare for whatever legislation passes.

Some in Congress contend that a compromise bill could be on President Bush's desk by September and that a House version could emerge from committee before the Memorial Day recess. After that, discussion would ensue on the House floor.

A compromise on toxics partially favors industry—utility boilers will be exempt from a number of regulations, except for mercury and particulates, said Sen. John Chaffee (R-RI). Chaffee spoke at the Edison Electric Institute's May 10 Governmental Affairs Confer-

A special report outlining utilities' Clean Air options begins on page 19

Continued on page 6



HQ-NEPOOL HVDC line is delayed

U.S. construction is completed on the $565-million Phase 2 transmission project connecting Hydro-Quebec (HQ) and New England. These 1000-MW converter transformers, which turn 450-kV dc into 345-kV ac, await further testing. The U.S. portion of the project, coordinated by New England Electric System, is on time and slightly under budget, but and HQ strike, recently resolved, may cause the project to miss its scheduled Sept. 1 start-up. Lines from HQ's Radisson substation near James Bay extends 930 miles to Sandy Pond substation, Ayer Groton, MA. It will expand capacity from 690 MW to 2000 MW.

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News Briefs

JILL MINNER, Special Projects Editor

Nuclear storage space will fill early: IA Board

In a recent report, the Iowa Utilities Board predicted that four of the state's nuclear power plants will fill their present storage capacity for spent fuel by the year 2002, even though the plants will be able to continue operating until 2030. According to the NARUC Bulletin, the U.S. Department of Energy is planning a national storage facility, but it will probably not be opened until 2010. The board concluded that without new storage capability, utilities may need to locate new coal-fueled or natural gas-fueled power sources to replace their low-cost nuclear electric generation. "An additional concern is that coal-fired capacity is a less attractive option with anticipated clear air compliance expenses," stated Iowa Utilities Board Member Nancy Boyd. Three Iowa utilities that rely heavily on nuclear power plants are Iowa Electric Light & Power, Iowa-Illinois Gas & Electric, and Iowa Power and Light, according to the board.

U.S. nuclear output hits single-month high

According to the U.S. Council for Energy Awareness, U.S. nuclear energy plants set a single-month record for output in January 1990. The 57.7-billion gross kWh high inched past the old record of 57.6 billion gross kWh set in August 1989, said USCEA.

Fannie Mae okays SRP energy efficiency plan

The Federal National Mortgage Association (Fannie Mae) has endorsed Salt River Project's new energy efficient residential construction program. The endorsement ensures that Fannie Mae will accept the Climate Crafted Home program's energy efficiency certification process for new homes, allowing increases of two percentage points for energy efficiency. "The program has allowed buyers, who would not have otherwise qualified, to purchase homes due to the 2-percent 'stretch' allowed for a Climate Crafted Home," explained SRP Assistant General Manager C.A. Howlett. SRP said its Home Stretch Mortgage is one of the first utility-sponsored programs—for new homes—in the nation to take advantage of the energy efficient guidelines available through Fannie Mae since December 1983. "We are pleased to receive this endorsement from Fannie Mae," said Howlett. "Home Stretch Mortgage is a progressive, innovative plan which can positively impact the Valley's residential real estate and mortgage lending information," he added.

EPRI awards three 'product champions'

The Electric Power Research Institute recently presented its Customer Systems Division Product Champion award to three outstanding electric utility employees. John W. Calhoun Jr. of Alabama Power Co., Dale Landgren of Wisconsin Electric Power Co., and James R. Thompson of Toledo Edison Co. were recognized for their significant contributions to technology transfer of EPRI-developed products into practical utility and utility customer use. Calhoun led efforts at Alabama Power to collect data supporting a change to the National Electrical Code; Landgren helped WEPCo reach a conservation goal; and Thompson initiated a "Working Partner" marketing theme to help Toledo Edison's industrial customers in his service area become more competitive. "Taking the results of research and development to the people in the field so the customers can benefit is what tech transfer is all about," said Arnold Fickett, EPRI customer systems division vice president.

McNeill named president amid PE changes

Philadelphia Electric Co.'s new nuclear group from left to right includes: David R. Helwig, Dickinson M. Smith, Corbin A. McNeill Jr., and Donald B. Miller.

Philadelphia Electric Co. recently announced a number of executive changes including the appointment of Corbin A. McNeill, Jr. to president and chief operating officer. McNeill has served as executive vice president of nuclear operation since 1988. "Corbin McNeill has demonstrated outstanding leadership and management skills in reorganizing Philadelphia Electric's nuclear operations in addition to overseeing the successful restart of the Peach Bottom plant and the construction and licensing of the Limerick nuclear facility," stated PE Chairman and CEO Joseph F. Paquette. Other executive changes at the utility include: Dickinson M. Smith, senior vice president-nuclear; Donald B. Miller, vice president of PE's Peach Bottom station; Raymond F. Holman, senior vice president of corporate planning and performance; and David R. Helwig, vice president, nuclear engineering and services.

PSI changes name

Public Service Indiana's name has been changed to PSI Energy Inc., and PSI Holdings will now be known as PSI Resources Inc., according to the company. "Our new name is a reflection of the kind of business our company is in; we're evolving from simply an electric company to a low-cost supplier of energy services," stated PSI Chairman James E. Rogers Jr. "Providing a reliable supply of electricity continues to be our company's mainstay, along with the responsive service our customers have come to expect," he added.

FPL sets up nuclear division, names head

Florida Power & Light Co. said it has established a separate nuclear division and named two executives to head it. Jerome H. Goldberg, executive vice president of the utility's nuclear energy department, was appointed president of the new division. Kenneth N. Harris, site vice president of FPL's Turkey Point nuclear plant, will serve as senior vice president-nuclear operations. "The new division dedicates all of our talents exclusively toward nuclear programs," explained Goldberg. "We plan to have the new structure in place by June and ready to meet the challenges facing our industry."

EUA says acquisition complete; Powderly to head Newport Electric

Eastern Utilities Associates said it has completed its acquisition of Newport Electric Corp. from NECO Enterprises Inc. for approximately $17.9 million. "Newport Electric is a welcome addition to the EUA System," said EUA President and CEO Donald G. Pardus. "We believe EUA brings added value to Newport's customers at the same time Newport brings added value to EUA's shareholders." Pardus also announced the appointment of Robert G. Powderly as president of Newport Electric. Powderly has served as vice president of EUA Service Corp. for the past three years.

C-E Environmental is renamed due to merger

The name of C-E Environmental Inc. has been changed to ABB Environmental Services Inc., as a result of Asea Brown Boveri Inc.'s acquisition of Combustion Engineering Inc. earlier this year. "We are extremely pleased with our association with ABB," said C-E Environmental President Lawrence S. Eytel, "and with the opportunities presented for both our clients and employees by the backing of a corporation of ABB's size and stature."

Iowa-Ill. Gas & Electric picks new president

Iowa-Illinois Gas and Electric Co. has announced the appointment of Stanley Bright to president and chief operating officer. Bright, formerly vice president-finance and chief financial officer, succeeds Barry O'Brien who will remain as chairman and CEO of the utility. "These changes are part of normal management transition to prepare the company for the 1990s and beyond," explained O'Brien.

Utilities install barrier net with new design

Consumers Power Co. and Detroit Edison have installed what they say is the world's largest barrier net in Lake Michigan at the Ludington pumped storage hydroelectric facility. For its second year of operation, the net has been modified to improve effectiveness in keeping fish from the plant and to overcome previous problems. "We learned last year that the design of the net is viable and we can effectively maintain and repair it," explained Gordon L. Heins, Consumers Power senior vice president of energy supply.

Utilities fined by NRC

The U.S. Nuclear Regulatory Commission recently proposed the following fines:

Duke Power Co.

A $50,000 civil penalty at the Catawba nuclear power plant was reduced to $37,500, because of corrective action taken by the utility.

Northeast Energy Co.

A $3,750 fine for an alleged violation of NRC requirements for the safe shipment of a piece of equipment used at the Millstone Unit 1 nuclear plant.

Tennessee Valley Authority

A $240,000 fine for retaliating against three employees who brought concerns about the safety of the Watts Bar plant to the attention of the NRC.

A $75,000 fine for two violations of NRC safety requirements relating to a residual heat removal pump design deficiency at the Sequoyah nuclear power plant.

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COMMENTARY

Notes from the back of an envelope

PacifiCorp/Pinnacle West merger: Is a hostile takeover possible?

Could there be a hostile utility takeover looming on the horizon? A spokesman for PacifiCorp suggests the possibility. If it should happen, it would be the first such investor-owned utility action in memory.

For years, critics have compared the investor-owned electric utility business to a men's club, where peaceful friendship, cooperation, and harmonious open acceptance of fellow-members have been bywords. In that atmosphere, such an acrimonious suggestion would have been unthinkable, which serves to show how much things have changed since the concepts of competition and diversification were extended to electric utilities.

PacifiCorp has been rebuffed in its fourth effort to merge Pinnacle West Capital Corp., the unfortunate, diversified parent of Arizona Public Service Co. Pinnacle West directors turned down PacifiCorp's $1.82-billion takeover bid, as well as a late offer by Salt River Project to buy part of APS' territory.

Pinnacle West has been a classic example of why shoemakers are advised to stick to their lasts, and utilities to the job of making and distributing electricity. Diversification has proved to be disasterous for Pinnacle West.

But now, Pinnacle West says it has put its unsuccessful savings and loan venture behind it. Regulators relieved the holding company from further responsibility for MeraBank in March after the company had provided a $465-million capital infusion to the troubled thrift. It has found a buyer for its unprofitable uranium mining operation.

Pinnacle West directors and financial advisors apparently believe that with *only* a $1.1-billion debt, and the potential of getting the Palo Verde nuclear plant back into service soon, PacifiCorp's $21 per-share offer isn't enough. Although share price was just $15.75 on the Big Board before the mid-May offer, Pinnacle West chairman Richard Snell called the PacifiCorp bid inadequate. He declared that the company now has a direction for recovery that it will follow and that the company's equity and intrinsic value will appreciate substantially by the time regulatory approvals could be obtained and shareholders paid money due them.

The question remains: what now? PacifiCorp has suggested that one of several options open to it would be to approach shareholders directly in a hostile tender offer. But it is hoping for a more harmonious solution. Nevertheless, PacifiCorp is deadly serious in wanting APS in order to balance long-term capacity needs and further open lucrative California markets.

Financial analysts call PacifiCorp's offer difficult to resist. The question may be how long Pinnacle West management can hold out. In other words, it may be more a matter of *when*, not *if*, Pinnacle West and APS become members of the PacificCorp family.

Confusion about the role of the press?

Just when you begin to think people in the industry know what you're doing, you get tripped up from your blind side. Recently an *EL&P* editor made contact with the head of public relations of a national industry association to arrange for our coverage of the association's convention. This person lumped *EL&P* in with equipment vendors in having a direct proprietary interest in being at the conference. This occurence is not an isolated happening. It seems to result from time-to-time from internal pressures to control costs (evidently for meals, receptions and the like), often coupled with selection of inexperienced people to provide media relations services. Such people seem to believe they are doing *EL&P*, and other trade publications, a favor by allowing free coverage of their meetings. Some, usually with association publications to protect, also prohibit the appearance or distribution of other publications at or near the meeting site.

It's unfortunate that such people try to limit press coverage. In preventing unrestricted reporting of their meetings, they do a disservice to their own members, as well as to industry associates, regulators and others who have no other opportunity to learn of those associations' activities.

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LETTERS

Childcare's role

Having just finished the "Labor/Management Concerns" feature of the March issue, I feel compelled to express my pleasure in its focus. In the 12 years I have been in the utility business (and an avid reader of *EL&P*), it is refreshing to read a piece that acknowledges the importance of childcare for workers in the utility industry.

While not a singularly feminine concern, childcare is important to any parent who has to work for a living. When I started in the business, I was one of a handful of women engineers. Many of my coworkers simply assumed that I would work until I had a baby. There were very limited childcare (and maternity leave) options.

In a male-dominated industry such as ours it is heartening to read an article that focuses on a subject perceived to be a "women's issue." Utility management must wake up to this very important problem and not continue to bury its head in the sand hoping that it will just go away. With a growing awareness of the employees' need for childcare, the industry may increase its attraction to women, a very significant part of the workforce of tomorrow.

Kudos!!

Maria Zazzera
Milltown, NJ

Editor's note: Women have always played a role in the operation of utility organizations. Happily that role has grown in recent years as more and more women have moved into jobs long considered to be the province of men, including engineering, law, finance, management, operations, construction and maintenance. Awareness of the need for childcare is an evolutionary development, albeit not yet universally available in the industry, that will benefit both men and women employees.

Research & Development

In 1963, *EL&P* devoted an entire special issue to the question of "who's to do the R&D?" An editorial by P.B. Garrett in your July 1965 issue also addressed this question.

In light of the changed and changing environment in which electric utilities now operate, relative to 10, 20 and 30 years ago, it seems that this question is more relevant now than ever before.

Deregulation, Independent Power Producers, new clean-air regulations, energy conservation, projected fossil-fuel shortages, competition, etc. etc., are complicating the utility industry future now as never before.

Have you considered doing an update on the September 1963 article and on the question of what utility R&D should focus on specifically?

Norman L. Ledeboer
Supervising Research Engineer
Northern States Power Co.

Editor's note: It's always nice to hear from a "seasoned" reader who, like this editor, recalls those pre-EPRI days. (I worked on that issue.) No, we haven't specifically planned to update that issue since R&D currently plays such a large role in day-to-day industry activities, but we do emphasize certain segments of R&D (such as the April '90 Focus Report on T&D R&D). Your suggestion, in light of the changing operational and regulatory environment, merits serious thought.

Identify illustrations better

I read your "Focus on Wheeling and Access" article regarding transmission system limits in the March 1990 issue of *Electric Light & Power* with interest. It presents a complex technical subject in a concise, understandable manner.

I would like to suggest that in future articles containing tables and graphs that are referred to in the text, those tables and graphs be labeled the same as in the text. Because your figures are not labeled, your article is not as easy to read as it could be. This is a drawback in using the article as information to explain this subject to those that do not understand all the background and detail and do not wish to take the time to label the figures themselves.

Thank you for your concise summary of this subject matter.

William E. MacMillan, Staff Engineer
Power Resources and System Planning Dept.
Consumers Power Company

Editor's note: Your point is well-taken. We'll try to do a better job in coming issues. Please let us know how you think we're doing.

Mystery substation

Working for a utility as an electrician, I find your publication interesting and resourceful. In your March 1990 an announcement on page 30 with a picture of a substation has caused much debate among my co-workers over the location of that substation. It looks like one of the subs in our jurisdiction. Would you please identify the owners' name and city, or at least the city? Enclosed is a copy of the picture.

Steven Suess
Santa Clara, CA

Editor's note: You caught us! The substation photo that reader Suess refers to came from our photo file, but there was no identification. We'd be grateful for help in identifying it.

Clean Air proposal

After having read and reflected upon the (March 1990) Commentary entitled "Single industry proposal offers economic air cleanup," I feel compelled to address the same issue but from a different and, perhaps, from a more insightful point of view. The writer of the commentary makes three significant but very narrow-minded implications: a) the U.S. Congress knows little or nothing about air pollution abatement; b) among the readership of *EL&P* are all of the "experts" in this field; and c) the $600-million National Acid Precipitation Assessment Program will answer all of our questions (and, of course, Congress' as well) about this subject.

It seems quite clear that the writer of the commentary holds his readership in very high esteem in regards to knowledge about air pollution controls and systems. Perhaps, however, he believes that the many environmental scientists and engineers whose sole purpose is to study the long-term impact of air emission point sources on the environment are among the readership? Maybe, but rather unlikely.

Perhaps the meteorological laboratories at various universities that continuously monitor air quality from stations located throughout the world and from space using highly sophisticated instrumentation and satellites have

Continued on page 66

25th Annual Top 100 Electric Utilities Report

Recovery continues, but performance totals mask individual problems

Robert A. Lincicome
Editor-in-Chief

BARRINGTON, IL—For the nation's 100 largest electric utility organizations, 1989 picked up where 1988 left off. More normal weather returned to most of the country, but kilowatthour sales still increased, pushing revenues generally higher. Net income for the Top 100 also improved over 1988.

Also on the plus side, a majority of the Top 100 electric utilities reduced their long-term debt in 1989. And more than a third improved their interest coverage.

But the number of utilities finishing the year in the red more than doubled, to 10 companies in 1989. Moreover, 41 utilities reported reductions in earnings for 1989 from a year ago.

Kilowatthour sales increased by 2.62 percent overall, but residential sales slowed. And average residential use declined slightly.

These were some of the principal conclusions from this year's survey of major investor-owned electric utility financial and sales performance in calendar year 1989.

While much of the survey specifically focuses on utility operations, financial data is obtained and reported for the utility or its holding company parent, depending on the name in which stock is traded on the financial market. According to the survey, 36 companies trade stock as holding companies and are indicated in the following tables with an asterisk (*). Some companies, such as Utilicorp and PacifiCorp, are diversified and function similarly to holding companies but retain their individual utility status.

Actually, the totals reported are understated slightly because they reflect only the results of 99 companies. Public Service Co. of New Hampshire stated that its situation was too fluid to report. PSNH said it was swamped with work associated with completion of the Seabrook nuclear plant, the company's emergence from Chapter 11 bankruptcy protection, and its takeover by Northeast Utilities, and could not report accurately.

Total electric customers served by the Top 100 utilities increased by 1.7 percent in 1989, to 82 million. Gas customers served by combination utilities also increased, by 1.2 percent, in 1989, to a total of 18.1 million.

Nevada Power Co. boasted the greatest customer growth, a huge 10.1 percent gain. Other big gainers, with one exception, were from the South and West, reflecting the general shift of population away from the Northeast and Midwest. Central Maine Power Co., up 5.2 percent, was the exception. Following were Puget Sound Power & Light Co., plus 3.76 percent; Florida Progress Corp. (Florida Power Corp.) 3.72 percent; San Diego Gas & Electric Co., 3.59 percent; Sierra Pacific Power Co., 3.48 percent and FPL Group (Florida Power & Light Co.), 3.46.

Slow sales increase

Kilowatthour sales increased in 1989 at a slower rate than in the previous several years. The increase in 1989 was 2.62 percent, to 2,227,899 GWh.

That growth marked a return to the more typical activity levels that followed the Oil Embargo and ran through the mid-1980s. The 1988 sales increase was 5.3 percent, a post-Embargo high.

Even so, the 1989 total was another all-time record.

More normal temperatures returned in 1989. Although there were isolated hot spots during the summer of '89, they didn't begin to compare with the degree or duration of the summer of '88. Exceptional cold in December for much of the country added a kWh sales boost late in the year, although some utilities incurred related expenses in 1989 and recorded the revenue in 1990.

The slower growth is easiest seen when broken down by type of customer. Residential sales inched ahead just 1.4 percent, to 651,100 GWh. Since customer growth was 1.7 percent, and since most of customer growth was residential, it is clear that residential use lagged.

Industrial kWh sales also barely made a positive gain, moving up just 0.6 percent, to 680,196 GWh. This reflected the generally meandering changes in output and economic activity of American industry.

Sales to commercial customers and those falling into the "other" classification provided the only solid growth in 1989. Commercial customers used 5.2 percent more kWh in '89 than a year earlier, pushing total sales to those customers to 586,852 GWh and reflecting the continuing switch away from a producer economy and to a consumer- and service-oriented economy.

Sales to "other" customers increased 4.9 percent, to 309,762 GWh. This includes sales to other utilities and to municipal and other special customers.

EARNINGS TABLE

Company	Rank	% Change From 1988	1989 Earnings Per Share, $	1988 Earnings Per Share, $
Centel*	1	259.86	5.11	1.42
Carolina Power & Light	2	105.88	4.20	2.04
Idaho Power	3	79.55	2.27	1.32
Ohio Edison	4	78.69	2.18	1.22
Interstate Power	5	29.38	2.73	2.11
Iowa Resources*	6	27.52	1.90	1.49
Public Service of Indiana	7	26.09	2.32	1.84
Midwest Energy*	8	24.59	2.28	1.83
Minnesota Power	9	23.40	2.90	2.35
Public Service of Colorado	10	21.03	2.59	2.14
Kentucky Utilities	11	19.59	2.32	1.94
Commonwealth Energy System*	12	18.29	4.14	3.50
Entech*	13	16.00	0.87	0.75
CMS Energy*	14	14.80	3.80	3.31
Iowa Southern*	15	11.29	3.55	3.19
Texas Utilities*	16	11.00	4.44	4.00
TECO Energy*	17	10.80	2.36	2.13
Duquesne Light	18	9.14	2.03	1.86
DPL*	19	8.64	3.27	3.01
Pennsylvania Power & Light	20	8.58	4.05	3.73
Cilcorp*	21	8.16	3.58	3.31
Washington Water Power*	22	6.30	2.70	2.54
Delmarva Power & Light	23	5.88	1.80	1.70
Hawaiian Electric*	24	5.52	3.06	2.90
Wisconsin Energy*	25	5.49	2.88	2.73
General Public Utilities*	26	5.47	5.01	4.75
Central Maine Power	27	4.92	1.92	1.83
St Joseph Light & Power	28	4.70	2.45	2.34
Duke Power	29	4.48	5.13	4.91
MDU Resources Group	30	4.42	1.89	1.81
Pacificorp	31	4.34	3.61	3.46
Florida Progress* (FPC)	32	4.26	3.67	3.52
Northern States Power	33	4.18	3.24	3.11
Sierra Pacific Power	34	3.54	2.05	1.98
Eastern Utilities Associates*	35	3.51	2.95	2.85
Kansas City Power & Light	36	3.44	3.31	3.20
Utilicorp United	37	3.03	2.04	1.98
SCEcorp*	38	2.01	3.56	3.49
Union Electric	39	1.95	2.61	2.56
Public Service Enterprise Group*	40	1.95	2.62	2.57
Nevada Power	41	1.69	1.81	1.78
Atlantic Energy*	42	1.63	3.74	3.68
SCANA Corporation* (SCE&G)	43	1.33	3.04	3.00
Philadelphia Electric	44	1.29	2.36	2.33
Consolidated Edison	45	1.22	2.49	2.46
Otter Tail Power	46	1.04	1.94	1.92
Potomac Electric Power	47	0.93	2.16	2.14
Cincinnati Gas & Electric	48	0.46	4.34	4.32
Central Vermont Public Service	49	0.39	2.59	2.58
American Electric Power*	50	0.31	3.25	3.24
Iowa-Illinois Gas & Electric	51	0.24	4.21	4.20
Southern Company*	52	0.00	2.68	2.68
Houston Industries*	53	−0.60	3.32	3.34
San Diego Gas & Electric	54	−0.94	3.15	3.18
Central Louisiana Electric	55	−1.11	3.55	3.59
Orange & Rockland Utilities	56	−1.26	3.14	3.18
Southwestern Public Service	57	−2.00	2.45	2.50
Madison Gas & Electric	58	−2.01	2.92	2.98
Green Mountain Power	59	−2.07	2.36	2.41
Empire District Electric	60	−3.61	2.94	3.05
IPALCO Enterprises*	61	−3.79	2.54	2.64
Oklahoma Gas & Electric	62	−4.69	3.05	3.20
IE Industries*	63	−4.94	2.31	2.43
Southern Indiana Gas & Electric	64	−5.07	2.81	2.96
Central & South West*	65	−5.25	3.25	3.43
Commonwealth Edison	66	−5.98	2.83	3.01
Allegheny Power System*	67	−6.06	3.72	3.96
Rochester Gas & Electric	68	−6.67	2.10	2.25
Dominion Resources*	69	−8.41	4.14	4.52
FPL Group* (FP&L)	70	−8.77	3.12	3.42
KPL Gas Service	71	−8.89	2.05	2.25
New York State Electric & Gas	72	−9.96	2.53	2.81
Northeast Utilities*	73	−10.70	1.92	2.15
Wisconsin Power & Light	74	−11.47	1.93	2.18
Baltimore Gas & Electric	75	−12.10	3.05	3.47
Puget Sound Power & Light	76	−12.15	1.88	2.14
Wisconsin Public Service	77	−13.16	1.98	2.28
Central Hudson Gas & Electric	78	−13.31	2.28	2.63
Louisville Gas & Electric	79	−13.51	3.20	3.70
Central Illinois Public Service	80	−18.72	1.91	2.35
Northern Indiana Public Service	81	−29.08	1.00	1.41
Kansas Gas & Electric	82	−35.24	1.36	2.10
Niagara Mohawk Power	83	−35.54	0.78	1.21
TNP Enterprises* (Tex−NM Power)	84	−63.39	1.90	5.19
Portland General*	85	−127.49	−0.58	2.11
Boston Edison	86	−147.31	−0.88	1.86
Tucson Electric Power	87	−171.72	−3.55	4.95
Middle South Utilities*	88	−214.93	−2.31	2.01
United Illuminating	89	−221.03	−5.87	4.85
Illinois Power	90	−302.80	−4.34	2.14
Gulf States Utilities	91	−370.27	−1.00	0.37
El Paso Electric	92	−1057.14	−3.35	0.35
Pinnacle West Capital*	93	−12820.00	−6.36	0.05
Public Service of New Mexico	94	NA	1.73	−5.78
Long Island Lighting	95	NA	−1.51	−10.08
New England Electric*	96	NA	2.36	−0.94
Centerior Energy*	97	NA	1.90	−0.53
Pacific Gas & Electric	98	NA	1.90	−0.10
Detroit Edison	99	NA	2.65	−2.92
Public Service of New Hampshire	100	NA	NA	NA

SALES DATA

Company	1989 Total Sales (KWH) Rank	% Increase	Average Annual Growth 1984 - 1988	1989 Sales (KWH) By Type of Customer (% of Sales) Resid.	Comm.	Indus.	Other	Average Annual Residential Use 1989	1988	Ratio of Long-Term Debt to Net Plant 1989	1988
Midwest Energy*	1	23.17	4.71	21.16	17.28	19.63	41.92	7,693	7,870	41.88	41.29
Idaho Power	2	17.75	-4.59	24.97	14.39	28.06	32.58	14,923	14,364	38.03	39.16
Green Mountain Power	3	14.56	6.81	23.74	23.30	20.38	32.58	9,049	9,011	44.07	36.26
Sierra Pacific Power	4	12.86	3.26	27.81	35.64	33.41	3.14	7,449	7,445	41.09	41.37
American Electric Power*	5	12.18	-1.82	22.19	15.56	33.55	28.70	10,953	10,962	47.55	49.63
Puget Sound Power & Light	6	10.90	1.58	44.86	28.62	18.11	8.41	13,430	13,213	55.50	56.85
Kansas Gas & Electric	7	10.79	0.37	23.53	19.55	33.30	23.62	9,248	9,726	38.75	40.71
Entech*	8	9.47	4.20	18.64	19.35	28.31	33.70	9,057	8,482	46.03	46.74
Nevada Power	9	7.96	5.12	43.16	19.90	30.97	5.97	13,624	13,771	53.17	52.49
Central Hudson Gas & Electric	10	7.82	-0.89	26.83	25.03	31.95	16.20	7,011	7,059	54.51	54.72
Louisville Gas & Electric	11	7.80	2.64	29.49	25.74	27.20	17.58	10,182	10,467	37.18	35.00
Washington Water Power*	12	7.14	0.63	29.47	20.62	13.12	36.79	13,531	13,284	53.04	53.66
FPL Group* (FP&L)	13	7.10	4.27	50.37	40.05	6.55	3.04	11,895	11,490	36.79	36.62
Southwestern Public Service	14	6.38	3.00	12.58	13.25	37.02	37.15	7,934	7,924	40.00	40.06
El Paso Electric	15	6.38	7.36	22.13	24.70	13.00	40.17	6,124	6,025	52.64	45.93
Delmarva Power & Light	16	5.91	4.61	28.16	26.56	27.94	17.34	9,639	9,575	41.72	40.60
New York State Electric & Gas	17	5.06	3.08	29.88	18.16	18.33	33.64	7,786	7,791	52.47	53.99
Dominion Resources*	18	5.06	5.47	35.97	29.57	16.29	18.17	13,109	13,006	46.81	46.21
Iowa Southern*	19	5.06	5.26	33.81	16.85	40.66	8.69	8,539	8,855	36.65	37.85
Boston Edison	20	4.89	2.34	24.82	51.59	13.42	10.17	6,160	6,270	42.70	46.53
Allegheny Power System*	21	4.64	6.07	18.67	10.96	27.46	42.91	9,950	9,850	40.32	41.60
San Diego Gas & Electric	22	4.63	4.79	35.64	36.67	20.22	7.47	5,447	5,420	37.72	40.64
Southern Company*	23	4.60	2.44	23.11	20.79	32.89	23.21	11,287	11,255	43.40	43.45
Portland General*	24	4.34	2.29	34.43	28.74	19.61	17.23	12,568	12,343	45.49	47.83
Cincinnati Gas & Electric	25	4.27	3.36	34.15	25.53	27.69	12.63	11,058	11,190	42.07	42.96
Wisconsin Power & Light	26	4.09	1.48	26.38	15.12	32.49	26.00	8,655	8,684	35.50	37.81
TECO Energy*	27	3.78	1.25	40.43	31.50	20.72	7.35	13,258	12,943	32.44	32.69
Atlantic Energy*	28	3.64	4.28	42.87	38.29	18.13	0.71	8,382	8,460	47.89	41.10
Public Service of Indiana	29	3.59	1.52	27.83	22.83	34.06	15.28	11,314	11,356	37.54	44.55
Hawaiian Electric*	30	3.58	3.25	28.00	26.00	46.00	0.00	7,318	7,195	31.89	32.40
Consolidated Edison	31	3.45	2.98	27.76	67.01	3.72	1.51	3,884	3,892	38.12	36.32
Orange & Rockland Utilities	32	3.40	0.87	33.24	22.96	31.07	12.72	6,922	7,079	40.20	41.44
Baltimore Gas & Electric	33	3.38	4.93	38.12	9.93	51.95	0.00	10,438	10,362	41.27	39.76
Potomac Electric Power	34	3.35	4.04	25.85	42.36	21.47	10.32	10,719	10,812	39.94	41.18
Pacificorp	35	3.04	17.89	22.57	19.51	38.54	19.39	10,209	10,070	45.20	44.88
New England Electric*	36	3.00	2.76	36.88	34.97	23.88	4.27	7,089	7,077	53.32	53.87
Central Louisiana Electric	37	2.98	2.50	39.79	17.85	34.59	7.78	12,526	12,164	31.44	37.30
SCANA Corporation* (SCE&G)	38	2.96	2.97	32.37	27.81	30.95	8.87	12,891	12,805	41.07	37.14
Rochester Gas & Electric	39	2.87	0.51	27.41	24.25	25.22	23.12	7,101	7,124	49.45	52.51
St Joseph Light & Power	40	2.72	3.63	38.20	29.35	31.45	1.00	9,615	9,835	33.37	36.91
MDU Resources Group	41	2.72	1.78	33.92	16.03	32.42	17.63	7,876	7,926	47.03	48.17
Public Service of Colorado	42	2.72	2.57	27.46	49.66	17.05	5.83	6,348	6,403	36.63	38.66
Carolina Power & Light	43	2.68	3.44	25.76	19.12	31.98	23.14	12,419	12,571	37.81	40.17
Pennsylvania Power & Light	44	2.68	7.57	29.02	23.90	25.16	21.93	10,064	10,059	39.05	38.80
Pacific Gas & Electric	45	2.19	2.81	35.81	38.76	25.43	0.00	6,468	6,537	48.89	50.22
Public Service Enterprise Group*	46	2.16	3.09	26.70	45.47	26.53	1.31	6,221	6,271	37.75	38.31
Long Island Lighting	47	2.00	3.54	42.04	51.40	0.00	6.57	7,932	7,904	162.93	49.31
Utilicorp United	48	1.99	23.36	39.32	22.79	17.56	20.33	10,385	10,364	45.14	45.67
Northeast Utilities*	49	1.97	2.80	38.54	35.18	22.33	3.95	8,460	8,418	49.40	50.75
SCEcorp*	50	1.84	1.45	30.89	34.04	32.15	2.92	6,217	6,264	46.35	46.91
Central Maine Power	51	1.83	3.41	34.61	24.94	38.71	1.74	7,384	7,358	45.38	56.58
Oklahoma Gas & Electric	52	1.53	-1.32	30.74	22.11	28.90	18.25	10,916	11,194	38.74	39.28
Central & South West*	53	1.51	-0.22	29.60	24.88	31.50	14.02	10,908	10,814	35.30	35.16
Texas Utilities*	54	1.51	3.36	33.20	29.09	27.05	10.66	13,747	13,498	40.13	43.86
Florida Progress* (FPC)	55	1.45	5.37	44.46	26.37	14.21	14.97	12,059	11,754	33.19	27.98
Northern Indiana Public Service	56	1.42	0.43	17.66	18.81	61.08	2.45	6,854	7,286	39.91	41.16
Middle South Utilities*	57	1.37	1.92	29.30	21.29	38.05	11.37	11,639	11,671	54.47	55.69
Philadelphia Electric	58	1.35	3.03	30.52	15.06	51.26	3.16	7,655	7,807	52.42	50.50
Wisconsin Public Service	59	1.32	3.67	23.84	24.60	30.22	21.33	7,450	7,616	37.64	38.35
TNP Enterprises* (Tex-NM Power)	60	1.28	-0.17	30.84	21.95	45.01	2.20	11,236	11,236	37.14	32.63
CMS Energy*	61	1.27	1.76	31.79	27.26	37.21	3.74	7,361	7,361	85.14	87.02
Eastern Utilities Associates*	62	1.27	2.83	34.02	35.97	19.99	10.02	6,226	6,277	52.57	54.78
Houston Industries*	63	1.20	-0.88	27.16	20.37	49.64	2.83	13,271	13,163	42.05	36.89
Cilcorp*	64	1.19	2.22	30.53	23.78	44.72	0.98	9,206	9,479	34.49	36.36
Niagara Mohawk Power	65	1.15	-1.13	29.26	32.30	34.42	4.02	7,700	7,626	57.04	52.85
Interstate Power	66	1.08	NA	21.85	17.10	54.89	6.15	7,632	7,872	43.38	43.64
Wisconsin Energy*	67	1.01	5.84	25.06	23.79	39.05	12.10	7,691	7,925	52.77	54.10
Gulf States Utilities	68	0.99	-2.84	23.57	18.92	44.90	12.61	13,228	13,029	46.94	49.83
Commonwealth Edison	69	0.93	2.60	26.52	29.89	30.01	13.57	6,647	7,160	37.34	36.92
Illinois Power	70	0.72	0.34	27.04	18.70	48.31	5.95	8,755	9,088	52.98	47.04
Central Illinois Public Service	71	0.70	-2.76	32.34	12.90	48.37	6.39	9,193	9,453	38.91	38.71
Duke Power	72	0.65	4.34	25.36	21.32	38.92	14.40	12,459	12,614	35.53	36.88
Commonwealth Energy System*	73	0.58	3.73	25.37	27.12	6.60	40.92	6,591	6,843	37.46	26.53
Central Vermont Public Service	74	0.50	5.18	30.08	25.70	12.51	31.71	8,066	8,108	42.83	42.42
Madison Gas & Electric	75	0.46	1.55	27.98	55.65	6.75	9.62	6,474	6,768	43.28	44.73
Union Electric	76	0.41	2.41	32.26	33.64	28.54	5.56	10,289	10,645	41.32	42.65
United Illuminating	77	0.28	2.25	35.49	42.47	20.90	1.14	6,814	6,804	63.30	56.36
Minnesota Power	78	0.16	2.11	8.75	8.53	72.40	10.32	8,297	8,156	51.75	53.92
General Public Utilities*	79	0.15	2.96	34.83	29.78	32.25	3.14	8,260	8,322	36.26	34.93
Kansas City Power & Light	80	-0.01	3.21	30.97	45.98	21.16	1.88	8,877	9,259	39.54	42.59
KPL Gas Service	81	-0.04	1.52	22.94	28.72	19.65	28.69	8,618	8,916	33.62	35.50
Northern States Power	82	-0.14	4.27	25.57	14.52	44.04	15.87	7,779	8,094	32.41	33.06
Iowa Resources*	83	-0.90	3.44	36.09	27.43	33.94	2.54	8,832	9,150	46.26	48.48
Detroit Edison	84	-0.91	2.83	28.39	21.07	46.23	4.30	6,668	6,866	55.38	51.04
Centel*	85	-1.27	-1.00	29.36	31.55	22.84	16.26	6,848	7,057	NA	NA
Pinnacle West Capital*	86	-1.53	5.13	32.44	34.45	17.77	15.34	11,077	10,945	44.62	43.87
Centerior Energy*	87	-1.84	2.64	24.68	24.76	45.39	5.17	7,295	7,462	42.43	42.08
Iowa-Illinois Gas & Electric	88	-2.13	1.95	25.86	28.05	43.17	2.91	6,696	7,192	40.75	40.81
Southern Indiana Gas & Electric	89	-2.19	3.68	20.77	17.95	34.10	27.17	11,199	11,669	42.92	40.79
Public Service of New Mexico	90	-2.28	NA	19.07	27.52	12.01	41.40	5,992	5,970	41.50	52.03
Tucson Electric Power	91	-4.52	9.04	27.90	16.38	34.69	21.04	8,879	8,646	60.36	61.73
Duquesne Light	92	-4.60	2.89	22.70	37.45	23.44	16.41	6,060	6,168	50.42	50.56
IE Industries*	93	-4.63	2.37	32.88	27.95	30.29	8.88	8,329	8,608	38.06	39.22
IPALCO Enterprises*	94	-5.80	4.65	31.87	21.32	46.03	0.77	10,668	11,010	37.45	39.22
Kentucky Utilities	95	-6.33	5.77	31.16	21.99	20.18	26.67	11,923	11,925	34.77	34.59
Otter Tail Power	96	-6.60	1.03	29.45	15.71	38.19	16.64	10,239	10,183	29.42	29.90
DPL*	97	-7.20	5.27	34.34	21.59	29.99	14.08	10,763	10,858	47.05	52.49
Ohio Edison	98	-10.67	6.67	23.90	19.55	30.73	25.82	8,336	8,425	50.54	53.05
Empire District Electric	99	-13.61	4.81	32.22	24.41	20.20	23.16	10,399	10,573	40.51	39.44
Public Service of New Hampshire	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE I
THE TOP 10 IN KWH SALES

Rank '89	Rank '88	Company	KWH Sales (billions)	'89% Change
1	1	Southern Company*	136.9	4.60
2	2	American Electric Power*	117.5	12.18
3	3	Texas Utilities*	81.9	1.51
4	4	Commonwealth Edison	72.2	0.93
5	6	SCEcorp*	69.1	1.84
6	7	Duke Power	66.6	0.65
7	8	FPL Group* (FP&L)	64.1	7.10
8	5	Pacific Gas & Electric	63.8	2.19
9	11	Allegheny Power System*	59.1	4.64
10	9	Middle South Utilities*	58.9	1.37

Overall, 79 of the 99 utilities reporting enjoyed sales increases. This was down from 99 utilities of 100 last year and 84 of 100 in 1988. Only 16 utilities bettered the 5.3-percent *average* reported a year ago.

Largest gain was reported by Midwest Energy, which boasted a gain of almost 23.2 percent. Runnerup was Idaho Power Co., which saw a rebound of bulk power sales to other utilities and gained 17.8 percent. Green Mountain Power Co. recorded the third best sales gain, at 14.6 percent.

Median sales growth was 1.84 percent in 1989. This compares with 5.5 percent in 1988. The 1989 median was the first since 1986 that failed to show an increase over the previous year. In fact, the median growth in '89 was below that of 1986, which was 1.9 percent.

The largest sellers of electricity were largely the same as reported a year ago, but there were some changes in ranking. The Southern Co. and American Electric Power Co. Inc., Texas Utilities Co. and Commonwealth Edison Co., ranked first through fourth, respectively, repeated from last year. Pacific Gas & Electric fell to eighth, making way for SCECorp, Duke and FPL Group to move up one position, to fifth, sixth and seventh. Allegheny Power System moved into the Top 10 kWh sellers ninth from eleventh a year ago, displacing Middle South Utilities (now Entergy Corp.), which fell to 10th.

AEP's gain, 12.2 percent, was also large enough for it to rank the company fifth in terms of growth rate.

With residential customer use increasing at less than the rate of increase in customers, it was not surprising that average residential use declined in 1989. For 1988, average residential use totalled 9190 kWh, down 2.2 percent from the record 9358 posted by the Top 100 last year, but still above the previous high of 8928 established in 1987.

Highest residential uses were reported in the Northwest, where power tends to be very low in price and many residents are all-electric, and in the west, Southeast and Texas, where summer temperatures tend to set meters spinning. Idaho Power Co., with average residential use (ARU) of 14,923 kWh, ranked first. Second was Puget Sound Power & Light Co., 13,440 kWh. Third was Nevada Power Co., at 13,624 kWh. Rounding out the Top 10 were 4) Washington Water Power Co., 13,551 kWh; 5) Dominion Resources (Virginia Power Co.), 13,109 kWh; 6) TECO Energy (Tampa Electric Co.), 13,258 kWh; 7) Texas Utilities, 13,747 kWh; 8) Houston Industries (Houston Lighting & Power Co.), 13,271 kWh; 9) Gulf States Utilities Co., 13,228 kWh; and 10) SCANA Corp. (South Carolina Electric & Gas Co.), 12,891. All 10 were among